4 (6)

F. 10503

Patent Abstracts of Japan

PUBLICATION NUMBER : 61126769
PUBLICATION DATE : 14-06-86

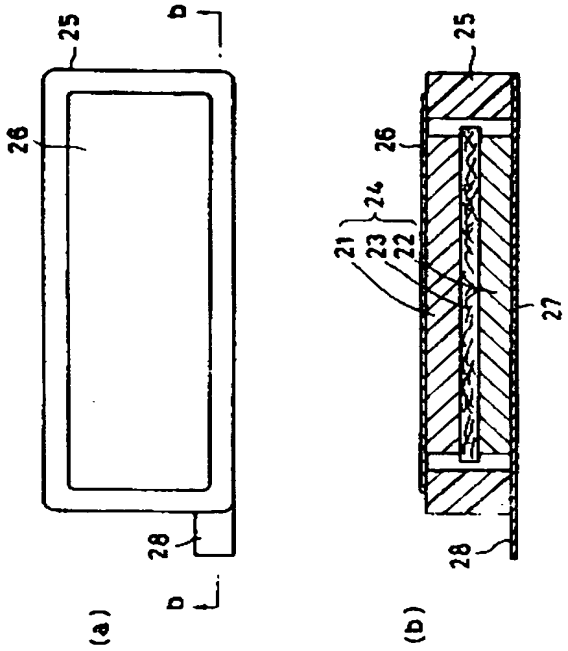
APPLICATION DATE : 22-11-84
APPLICATION NUMBER : 59247768

APPLICANT : TOSHIBA BATTERY CO LTD;

INVENTOR : ASAMI YOSHIAKI;

INT.CL. : H01M 2/30

TITLE : FLAT SHAPED CELL



ABSTRACT : PURPOSE: To make it possible to manufacture a thin shaped device with cell which is built in it by providing an extended portion extending from outside peripheral portion of an insulating mouth sealing plate at a portion of terminal assembly.

CONSTITUTION: A negative electrode terminal assembly 26 is provided at one side frame shaped surface of a frame shaped insulating mouth sealing plate 25 and a positive electrode terminal assembly 27 is provided at the other side frame shaped surface, as well as, an extended portion 28 is formed at a portion of one side wall of the positive electrode terminal assembly 27. Thereby, it is possible to arrange the extended portion 28, composed of the negative electrode terminal assembly 26 and the positive electrode terminal assembly 27, at one plane surface for example, therefore, it is possible to provide a connector, which has a pair of assemblies at the same plane surface corresponding to arrangement of the both terminal assemblies 26, 27, in a cell room of the device having a built-in cell. As a result, since thickness of the device may be able to reduce by thickness equivalent to one side portion of the connector by using this flat shaped cell, the thin shaped device can be obtained.

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **61-126769**
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(21)Application number : **59-247768**
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(71)Applicant : **TOSHIBA BATTERY CO LTD**
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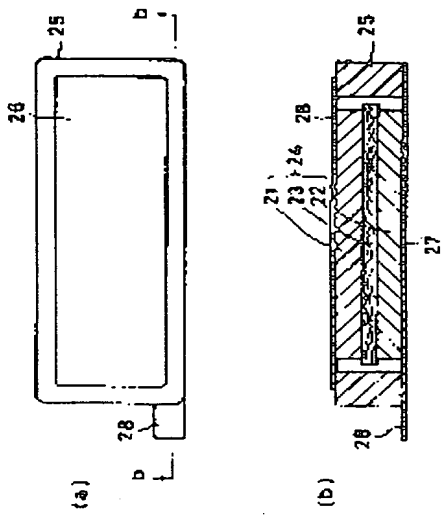
(54) FLAT SHAPED CELL

(57)Abstract:
PURPOSE: To make it possible to manufacture a thin shaped device with cell which is built in it by providing an extended portion extending from outside peripheral portion of an insulating mouth sealing plate at a portion of terminal assembly.
CONSTITUTION: A negative electrode terminal assembly 26 is provided at one side frame shaped surface of a frame shaped insulating mouth sealing plate 25 and a positive electrode terminal assembly 27 is provided at the other side frame shaped surface, as well as, an extended portion 28 is formed at a portion of one side wall of the positive electrode terminal assembly 27. Thereby, it is possible to arrange the extended portion 28, composed of the negative electrode terminal assembly 26 and the positive electrode terminal assembly 27, at one plane surface for example, therefore, it is possible to provide a connector, which has a pair of assemblies at the same plane surface corresponding to arrangement of the both terminal assemblies 26, 27, in a cell room of the device having a built-in cell. As a result, since thickness of the device may be able to reduce by thickness equivalent to one side portion of the connector by using this flat shaped cell, the thin shaped device can be obtained.



LEGAL STATUS

[Date of request for examination]

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[Date of final disposal for application]

[Patent number]

[Date of registration]

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対応して同一平面内に一対の端子部を有するコネクタを設けることができる。その結果、前記構造の扁平形電池を使用することによって、コネクタの一方の端子部に相当する厚さだけ機器を薄型化できる。つまり、第５図に示すコネクタ１２の一方の端子部１１ｂの厚さ（ｔ）に相当する分だけ薄型化できる。

また、一方の端子板（例えば負極端子板２６）を絶縁封口板２５の枠状面に該枠状面の周辺が表出する、つまり絶縁封口板の面積より小さくすることよって、電池の薄型化による外周部で両端子板２６、２７が接触、短絡するのを防止できる。

更に、上記構造によれば、絶縁封口板２５から延出した延出部２８を有するため、電池の寿命により機器自体を廃棄するような場合では、前記延出部２８を機器内に取付けた一方の端子にスポット溶接して固定、接続することも可能である。

なお、上記実施例では正極端子板２７のみに延出部２８を設けたが、これに限定されず、第２図又は第３図に示すような構造にしてもよい。

即ち、第２図の扁平形電池は絶縁封口板２５の両枠状面に取付けられた正負の端子板２６、２７の対向する一側壁の一部に、延出部２８ａ、２８ｂを互いにずれるように夫々設けたものである。

第３図の扁平形電池は、負極端子板２６の一側面の一部に延出部２８ａ´を設けると共に、正極端子板２７の一側壁の一部に延出部２８ｂ´を前記延出部２８ａ´と略対称的となるように設けたものである。かかる構成によれば、電池を機器の電池室内に設けたコネクタへの差込み時に、電池をいずれの方向からコネクタに挿入しても該コネクタの端子部と電池の端子板とを接続できる。

（発明の効果）

以上詳述した如く、本発明によれば一平面に正・負極の端子板を配置することにより、電池が組込まれる機器の電池室内に前記両端子板の配置に対応して一平面内に一対の端子部を有するコネクタを設けることができ、ひいてはコネクタの一方の端子部に相当する厚さだけ機器を薄型化し得る扁平型電池を提供できる。また、機器を薄型化する必要がない場合には、発電要素を構成する負極シート及び正極シートの厚さを厚くできるため、電池の放電容量を向上できる。

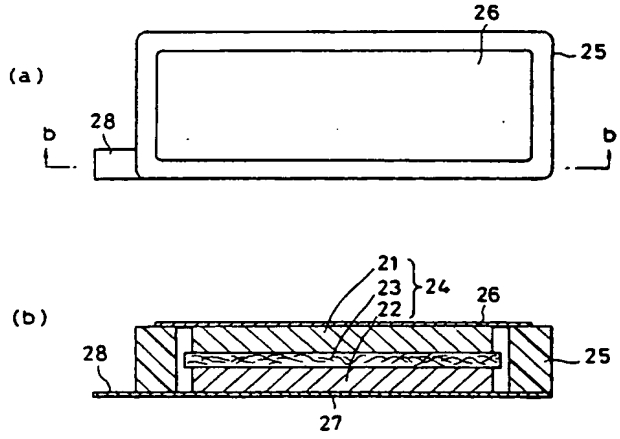
４．図面の簡単な説明

第１図（ａ）は本発明の実施例における扁平形電池の平面図、同図（ｂ）は同図（ａ）のｂ－ｂ線に沿う断面図、第２図及び第３図は夫々本発明の他の実施例を示す扁平形電池の平面図、第４図は従来の扁平形電池の断面図、第５図は従来の機器の電池室内に配設されるコネクタの概略図である。

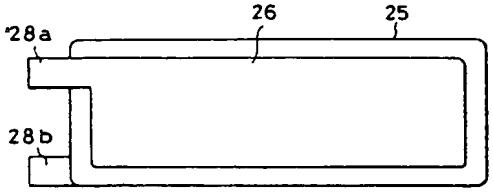
２１…負極シート、２２…正極合剤シート、２３…セパレータ、２４…発電要素、２５…枠状の絶縁封口板、２６…負極端子板、２７…正極端子板、２８、２８ａ、２８ｂ、２８ａ´、２８ｂ´…延出部。

出願人代理人　弁理士　鈴江武彦

第１図



第２図



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F. 104503

Patent Abstracts of Japan

PUBLICATION NUMBER : 61024144
PUBLICATION DATE : 01-02-86

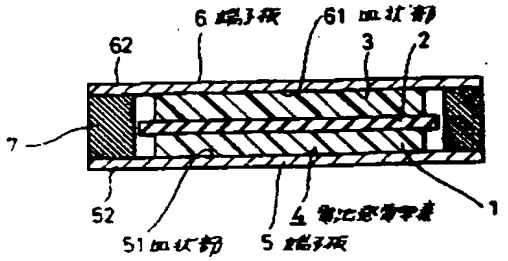
APPLICATION DATE : 13-07-84
APPLICATION NUMBER : 59145607

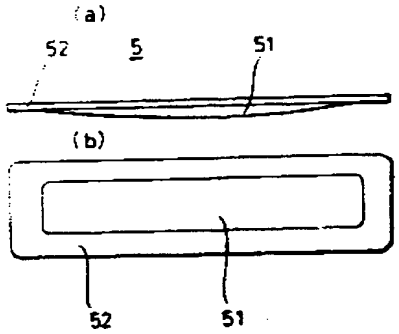
APPLICANT : TOSHIBA BATTERY CO LTD;

INVENTOR : KATO TAKASHI;

INT.CL. : H01M 2/20

TITLE : THIN BATTERY





ABSTRACT : PURPOSE: To surely prevent the unnecessary expansion of a positive and a negative plates, by shaping the central portion of at least one of the plates as a dish.

CONSTITUTION: A battery electricity generating substance 4 is pinched between a positive and a negative plates 5, 6 which also serve as casing members. The plates 5, 6 are made of an elastic metal such as stainless steel at a small thickness. The central portions 51, 61 of the plates 5, 6 are formed as a dish. The plates 5, 6 have flanges 52, 62 along the peripheral edges of the plates. A sealing member 7 made of a filmlike fusible adhesive such as an ionomer made of a copolymer of epoxy and acrylic acid is interposed between the flanges 52, 62 of the positive and the negative plates 5, 6 to seal up an opening. As a result, stress is always elastically applied to the battery electricity generating substance 4 by the dish-formed portions 51, 61 of the plates 5, 6 so that the expansion of the substance 4 can be suppressed not only at the time of the sealing-up of the battery opening but also after it.

Patent Abstracts of Japan

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PUBLICATION DATE : 15-05-87

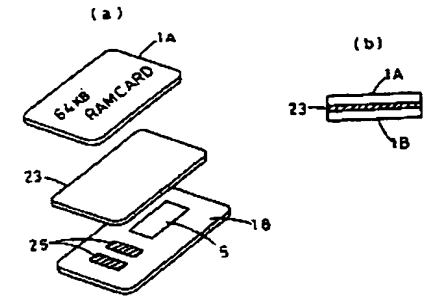
APPLICATION DATE : 31-10-85
APPLICATION NUMBER : 60242836

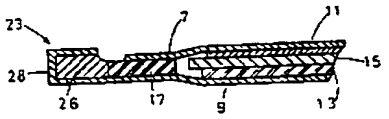
APPLICANT : TOSHIBA CORP;

INVENTOR : HIRANUMA SHUJI;

INT.CL. : H01M 2/30 G06K 19/00 H01M 6/12 // G06F 15/02

TITLE : PORTABLE ELECTRONIC DEVICE





ABSTRACT : PURPOSE: To simplify electrical connection and mounting of cell while to reduce the size and to improve the reliability by arranging the positive and negative electrodes on a same plane, thereby facilitating power supply to electrical parts.

CONSTITUTION: A cell 23 is constructed with a housing/negative plate 7 and a housing/positive plate 9 arranged respectively on the upper and lower sides, a negative electrode functioning material 1 and a positive electrode functioning material 13 arranged respectively at the inside of said plates 7, 9, a separator 15 and material 17 for sealing the end section. While an insulation resin putty 26 is provided the sealing material 17 and a terminal 28 folded into C-shape is arranged around said putty 26 and one end thereof is connected to the housing/plate 9 while the other end is arranged on the same plane near the housing/ negative plate 7. In such a manner, the cell 23 arranged with both electrodes only on single face is arranged between the base material body 1B and the base material cover 1A. Then the positive plate 9 and the housing/negative plate 7 comprising the folding terminal 28 arranged near the single face of the cell 23 are arranged to bring in contact with a pair of terminals 25, 25 arranged on the base material body 1B respectively.